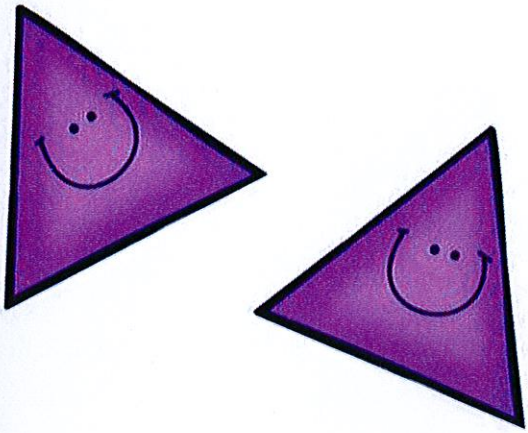


Title:

By: **Ms. Rapoport**

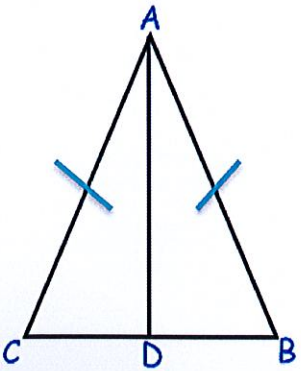
ONCE UPON A TIME, THERE WAS A GIVEN...

1. D is the midpoint of $\overline{CB}$

AND

2. $\overline{AC} \cong \overline{AB}$

So the diagram changed...

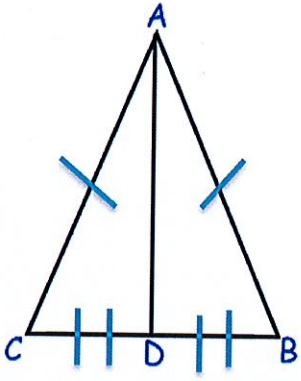


Triangle ABC set out show the two triangles inside of it were congruent…

"This will be impossible!" cried Triangle ABC.

Point D shouted out, "I can help! I am the midpoint of $\overline{CB}$! Since I am the midpoint, $\overline{CD} \cong \overline{BD}$.

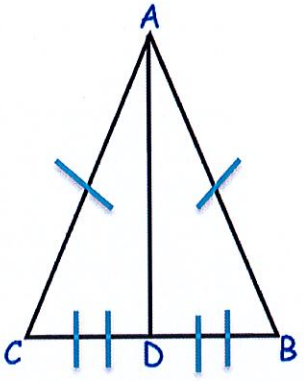
So the diagram changed again…



Triangle ABC thanked Point D but said, "I still haven't found enough information to say the triangles are congruent."

$\overline{AD}$ had been taking a nap but woke up when Triangle ABC started complaining again.

"Hey," said Triangle ABC. "Will you be quiet if I help you? Don't forget: I am a shared side... just look at the diagram!"

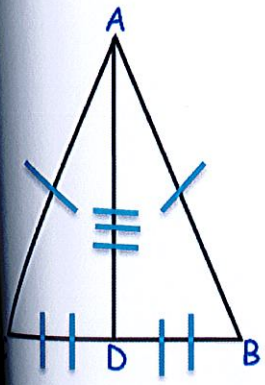


"What?" said Triangle ABC. "What do you mean?"

"It means that I am a side of BOTH triangles (ADC and ADB) and I HAVE to be congruent to myself... that's the reflexive property," said $\overline{AD}$.

"Oh! So, I can say $\overline{AD} \cong \overline{AD}$!

So the diagram changed again...

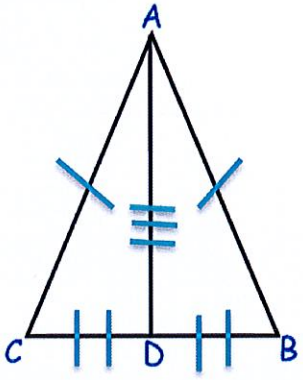


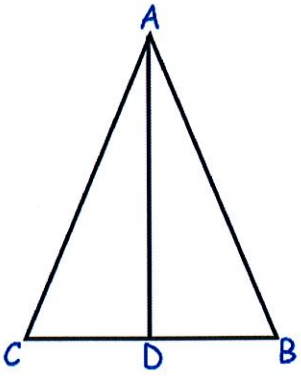
"I SEE IT!" said Triangle ABC.

$\triangle CAD \cong \triangle BAD$

They are congruent by Side Side Side (SSS) because:

1. $\overline{AC} \cong \overline{AB}$
2. $\overline{CD} \cong \overline{BD}$
3. $\overline{AD} \cong \overline{AD}$





Given: D is the midpoint of $\overline{CB}$
$\overline{AC} \cong \overline{AB}$

Prove: $\triangle CAD \cong \triangle BAD$

Statements	Reasons
1. D is the midpoint of $\overline{CB}$	1. Given
2. $\overline{AC} \cong \overline{AB}$	2. Given
3. $\overline{BD} \cong \overline{CD}$	3. a midpoint divides a segment into two congruent parts
4. $\overline{AD} \cong \overline{AD}$	4. Reflexive property
5. $\triangle CAD \cong \triangle BAD$	5. SSS